PACE REPORT

Packerland Atari Computer Users Society

August/September 1987

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Plus regular (and irregular) features

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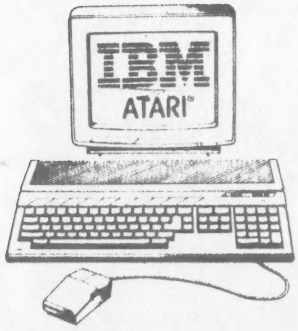

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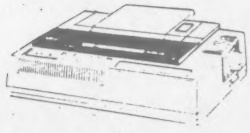

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PACUS REPORT is the newsletter of the Packerland Atari Computer Users Society (PACUS) which includes three NorthEastern Wisconsin chapters in Green Bay, Sheboygan, and Appleton.

The Green Bay chapter of PACUS meets the first Saturday of each month at 9:00 a.m. in the Community Room of EastTown Mall, Green Bay.

The Sheboygan chapter of PACUS meets the second Wednesday of each month at 6:30 p.m. in the meeting room of the Sheboygan YMCA.

The Appleton chapter of PACUS meets the second Tuesday of each month at 6:30 p.m. in Room W-42 of the UW-Extension, Midway Road, Menasha.

PACUS is an association of individuals in the NorthEastern Wisconsin area promoting and developing the use of ATARI computers. PACUS is not affiliated with the ATARI CORP. nor any other commercial organization. All ATARI computer users are invited to join and participate.

A family membership is $15 for one year, and entitles the member to a subscription to this newsletter, access to the group's public domain library, special discounts, and any other benefit of PACUS membership.

Exchange newsletters are invited to reprint any PACUS REPORT article if credit to both the author and the PACUS REPORT is given.

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EDITOR'S ESSAYS

by Randy McSorley

This is the last issue of the PACUS REPORT that I will edit. I've had the job for over three years now, and with my other obligations I seem to have less and less time each day to devote to the PACUS REPORT.

Editing the PACUS REPORT has been a very rewarding experience. I've learned quite a bit about my computers over the years because of the newsletter. Most of the programs I've written have been associated with the newsletter in one way or another. Even R-DRAW started out simply as a program to draw borders around text for the newsletter.

Over the years I've been lucky enough to have a steady supply of talented people willing to donate articles. Notable among the people who made the newsletter as great as it is today (in alphabetical order) are Tim Ekdom, Skip Grunow, Dirk Kagerbauer, Kevin McSorley, Mills Perry, George Ruiter, Peter Schefsky, Ron Starkey, Greg Vanden Heuvel, and of course, the mysterious John B. Sloop. I almost decided to reveal Mr. Sloop's true identity in this issue, but what if he wants to write for the next editor? I'll tell you one thing, HE AIN'T ME!

As long as I'm handing out thanks, a big THANKS to my unofficial "folding committee" who would help me collate, fold, staple, stamp, and mail the newsletters. Lori, my wife, always pitched in, as did my brother Kevin. Peg Bremer and Greg Vanden Heuvel came over once in a while, too. Muchos gracias.

Now here's some tips for the next newsletter editor, whoever he or she may be:

1) Don't make a habit of taking threads off CompuServe or GEnie for the newsletter. Most of this stuff has been seen by most of the people before the newsletter comes out. Paraphrase or quote information you gather, and give the source. The news becomes easier and more enjoyable to read.

2) Don't put the articles up on a BBS before the newsletter is issued. There's nothing more boring than old news.

3) Keep it light. Any in-fighting or bickering on the printed page will reflect on the group and will surely discourage people from joining the group.

4) Give credit where it's due. If you reprint an article from another newsletter, make sure the group and the author are credited. Everybody likes to see their name in print.

5) Be prompt. Stick to your deadlines, and make sure the newsletter is regular.

6) Make the newsletter as attractive as possible. Use interesting covers, crisp lettering, and graphics here and there to brighten up the newsletter.

7) Watch the errors! Spelling errors are pretty easy to catch, but many grammatical errors can slip by. Avoid obvious mistakes like the abuse of apostrophes ("I own three Atari's") and typos ("Their are to many of them too mention").

8) If possible, let someone else proofread the newsletter before it goes to print. There are many errors that can slip by the editor, and a second opinion can make all the difference.

9) Find a good, reliable printer to do the printing. The appearance of the newsletter is critical.

10) Above all, remember that the PACUS REPORT is the official newsletter of PACUS, and as such should show PACUS in the best possible light. A group's newsletter is the most tangible part of a user group, and can mean the difference between an average group and an excellent one. Many members consider their newsletter to be the most important part of the user group.

I still intend to continue contributing to the PACUS REPORT in the future, and will continue my "Exploring GFA BASIC" column. Here's to the next newsletter editor!

ATARIANS FOREVER!

Programmer's Guide to GEM

book review by Tim Ekdom

First there was the Atari Developer's Kit. Everything you wanted to know about GEM. Except it cost $300 and was almost impossible for a novice to decipher. Then there was the GEM Programmer's Reference from Abacus. It had a complete listing of the AES and VDI functions, but lacked enough information on how to actually write a GEM program. What a new GEM programmer like myself needed was some solid "how to". Clayton Walnum's "C-Manship" columns are excellent, but one lesson a month is a little too infrequent. So when I saw the Programmer's Guide To GEM, I snapped it up.

Programmer's Guide To GEM, by Phillip Balma and William Fitler, is published by Sybex, and sells for $19.95, a very reasonable price for a computer book! Especially since it has a wealth of "how to" information.

Programmer's Guide covers the AES functions by grouping them into logical units called libraries. For example, the Menu Library contains associated functions to construct and manage the drop-down menus. The purpose of each function is explained, along with a sample C language syntax call, and the input and output parameters. The Window Library section discusses window management, and the Object Library section discusses GEM objects, object trees, object states and types, and TEDINFOs.

The chapter on the VDI groups the functions according to the type of drawing

that's done. It explains coordinate systems and raster operations. Most functions are accompanied by sample C programs to demonstrate the function.

If this were all the book contained, it would already beat Abacus. But we're only half finished! Programmer's Guide also contains two complete GEM programs (in C). A simple "hello world" program illustrates the basic techniques for starting up and maintaining a windowed GEM application. And there's a version of the "Doodle" GEM drawing program. Both of these programs are fully explained in the accompanying text. This is what a beginning GEM programmer really needs to figure out how to use all of this!

Finally, there's a chapter on advanced topics such as Metafiles (which STers can ignore), a glossary, a quick reference guide to GEM calls, and a short tutorial on using the Resource Construction Set. I have only one caveat -- the source code in some sample programs needs a little massaging to run on the ST. The authors meant the source to be portable, so they have #defined declarations for variable types. Check the header files in the appendix. And functions requiring address parameters (for example wind_set) are given in the format for the IBM version of GEM.

The Programmer's Guide to GEM, accompanied by a reference on the bios, xbios, and gemdos (which the Megamax manual handles well), will serve as a stand-alone tutorial and reference on GEM programming. I recommend it.

DOS 2.0/2.5 File Structure

by Mills Perry

Disk structure.
Single Density:
1 disk = 720 sectors.
1 sector = 128 bytes.
Total of 92,160 bytes.
707 usable sectors.
13 reserved sectors.
DOS 2.5 Enhanced Density:
1 disk = 1040 sectors.
1 sector = 128 bytes.
Total of 133,120 bytes.
13 reserved sectors.
1010 usable sectors.
16 hidden sectors.

Reserved DOS Sectors:
0 Not used,
1-3 Boot sectors.
360 VTOC sector.
361-368 Disk directory.
1024-1039 Hidden sectors, unavailable to DOS 2.5, but accessible through CIO.
Everything else is yours.

Sector Types.
1. Data sector.
2. Boot sector.
3. Directory sector.
4. VTOC sector.

I. Data Sectors.
These are the sectors on the disk that you are able to use.
Bytes 0 - 124 = your data.
Bytes 125 - 127 = linkage bytes.

Linkage structure:
File number - 6 bit number
Byte 125 bits 7-2.
Next sector in file - 10 bit number
Byte 125 bits 1-0.
Byte 126 bits 7-0.
Bytes used in sector - 8 bit number
Byte 127.

Binary run files are distinguished from other data files by six bytes of header information.
0-1 Always contain $FFFF
2-3 Start address of program.
4-5 End address of program.

II. Directory Sectors.
There are 8 directory sectors containing file name and other information on all your files. Each sector has space for eight file entries. Multiplied by eight sectors gives a maximum of 64 files per disk. Each entry has the following format:
0 Status byte.
7 = File deleted bit.
6 = File is in use bit.
5 = File is locked bit.
4-2 Unused bits.
1 = DOS 2.0 file indicator bit.
0 = File open for output bit.
1-2 File length in sectors.
3-4 Start sector.
5-12 File name,
13-15 File name extender.

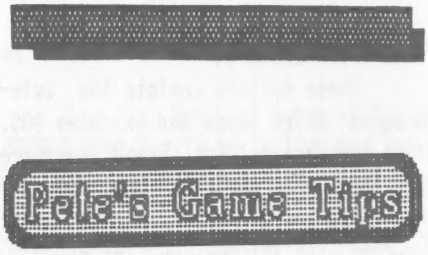
III. Boot Sectors.
These sectors contain the auto-boot program which loads and executes DOS.SYS. Most commercial disk based software is also in the form of boot files. These files use all 128 bytes in each sector and have no link information. Therefore, boot files must start at sector 1 and continue sequentially to the end of the file.Boot Files require a six byte header in the following format:
0 This byte is always zero.
1 Number of sectors to load.
2-3 Load address.
4-5 Run address.

IV. VTOC Sectors.
VTOC is short for "volume table of contents". It occupies sector 360 and keeps track of every sector on the disk. Bytes 10 - 127 are the sector bit map for single density disks and bytes 5 - 127 for enhanced density. A zero bit means the sector is in use and a one bit means that the sector is free. Bytes 0 - 4 contain the following information:
0 Use byte.
1 = DOS 1.0
2 = DOS 2.0 or 2.5
1-2 Total number of sectors.
3-4 Number of free sectors.

Some of you may have noticed that the numbers I have given you don't add up for enhanced density disks, ie. how can you represent 1040 sectors with 927 VTOC bits? I don't know why, but DOS 2.5 makes it work. Perhaps it uses additional sectors above the 720 sector line where my sector editor can't reach, but perhaps some programer will come who is mightier than I to explain these mysteries to you. Or maybe this is the sort of thing we find out about when we die.

Acknowledgements.
This article has drawn heavily on an article that appeared in the ANALOG Compendium, "Disktool Rev. 3" by Tony Messi-

na. I heartily recommend this article to anyone who wants to learn more about the raw data I presented.
For examples of how to read and write to the hidden sectors, see ANALOG #47, Oct 86, "DISK FILE" by Charles Steinman.



collected from many various sources, compiled by Peter Schefsky

Most of these tips are for the 8-bit computers. However, many can be used for any version of the game.

MASK OF THE SUN

Lost? To get you going try this: Get map. Look map. Get jeep. You will be traveling north automatically. Continue west. Get all. Go out jeep (Exit jeep). Go hut and give food. The old woman will give you a flute and tell you something...remember it. Then go out and get in jeep. Go west, then northwest. You will be at the statue of a cat whose head has been removed. Drop all but pills. Get out of jeep and look statue. You will see the secret record XOTZIL. Remember it. Get head. Drop head on statue. The statue turns into a jaguar and departs.

F15 STRIKE EAGLE

Always running out of gas on those long missions? Try using the "A" afterburners for energy.

STRIP POKER

Change file OP1.1 to SHORT. Change OP1.5 to OP1.1. The first girl will appear nude.

CASTLE WOLFENSTEIN

You can shoot through the sides of the screen and kill everyone that is in the aim of your gun.

ULTIMA II

For the 8-bitters, sector #16 holds all of a character's quality, like his gold, agility, strength, hitpoints, etc. You can edit the sector and just put in your own. I would recommend Diskey, Diskfixer, or Disk Wizard to do this. The data shows up in decimal, so it is easy to spot it.

TELENGARD

To raise your hitpoints, gold, etc. all you have to do is load in your character with any DOS compatible word processor. Then just type over the old numbers.

JUMPMAN

On the first board, go to the extreme right, type 54354. Then you can push the number of the board you would like to go to.

SUMMER GAMES

When you're in the pole vaulting event, and you get to heights of 5.5 meters and overchoose low pole grip, and as soon as you plant the pole, push up. Then push the button just before your pole knocks the bar down. If you do it correctly, you'll go under the bar, but you will get a successful jump.

REALM OF IMPOSSIBILITY

When you enter a room, press and hold down the OPTION key, making the monsters ignore you. When you get to an exit, push against it and release the button.You will move to the next room, where you can repeat the process.

KARATEKA

When you get to the gate, go halfway through and then immediately back. The gate should close, and then press against it while it opens. When it opens fully, you will be able to get through. When you get to the last room where the princess is, stop running or she will kill you.

MINER 2049ER

At any time during the game, type 213(space)782-6861. This is the phone number on the title screen. Then push SHIFT and the number key for the level you want. You can change levels at any time during the game, but you only have to type the password once.

ZORK I

When you're in the Cyclops room, type in the name of the guy in greek mythology who killed the cyclops.

When you're in the Loud room, and it just repeats everything, type in "echo", which will turn it off. You can get the bar by typing "GET BAR".

Don't try to open the egg, you'll just break it. Give it to somebody who has had experience in picking locks.

HACKER

The test site is Australia.

See the option "IR" on the command area? Push "I" when you are in the dark and you can utilize this incredible TV offer. You will be able to see thru the viewport and transact, etc.

P.S. you can't change the time zone.

INFIDEL

The coordinates for the pyramid are 24 deg. 11' 7" East by 32 deg. 12' 37" North.

ULTIMA III

To solve ULTIMA III, you need the Magic Weapons, because you need those to kill the monsters in the castle. You also need

to get your magic points and your hit points up and you need all the marks.

To get into the Exodus Castle, type the word "EVOCARE".

ALL ON-LINE ADVENTURES

For 8-bitters, when you die, press RESET and you can continue without graphics forever.

PITFALL

Start the game by pressing OPTION and you will have unlimited lives.

PHARAOH'S PYRAMID

The code word is "Throne".

SPARE CHANGE

Pressing "CONTROL Z" will bring you to the zerk control panel.

TRACK ATTACK

On the box car screen, listen for a click from the keyboard (800 only), then one second later jump.

LODE RUNNER

Press "CONTROL E" while loading from editor command menu. Now you can type in character commands.

SPELUNKER

In sector 28 (8-bits), look for this string: A6 CB 30 2D - change to: A2 07 86 CB. This will give you unlimited lives.

DIAMOND MINE

The password is "DIAMOND". This will bring you to levels sixteen to twenty.

THRESHOLD

Remove "Threshold" disk from drive after loading. Every time the drive restarts, you will be up one level. Insert disk when drive is off to start at that level.

PHARAOH'S CURSE

The password is "SYNISTOPS".

CANYON CLIMBER

If you complete the first screen and have lost any men, hold the joystick button as the bridges blow up and you will have three men but no score.

PREPPIE

Pause the game while in play. Press RESET and re-start it. All objects except your man and frog will remain still.

DONKEY KONG JR.

Pause the game, hold down the SHIFT key and type "BOOGA". Un-pause the game and press "S" to change screens, "K" to make yourself immune to snappers, birds, and sparks.

SCROLLS OF ABADON

The following are a list of commands to type while playing:

WALL - allows movement against arrows.
ICE - suppress monsters temporarily.
RES - Type when game is over and you will get one free man.
SPA - This creates a shield which will kill all monsters.
FLI - Warps you to the next level.
VIS - Makes disks visible without gems.
MAP - Makes all parts of the map visible.

OLLIES FOLLIES

Type the following passwords to go to higher screens:

FRANK FANDA NORBI ZOOM

GHOSTBUSTERS

For your name, type "600". When it asks if you have an account, type "Y" account # is: 11111111. You will have $246,000.

MASK OF THE SUN

To get by the room filled with gas, go immediately southwest.

HITCHHIKER'S GUIDE TO THE GALAXY

Q. You said that to get through the screening door you had to remove the common sense particle from your brain. How do I do this?

A. When using the Improbability Drive, you may find yourself in the middle of a neuron group in your own brain. Wander around for a while and you'll find a common sense particle. Get this, and you'll have successfully removed it from your brain.

PLANETFALL

Q. How do you get the key from the crevice? where is the kitchen access card?

A. To get the key, hold the metal bar near it. The kitchen access card is located in one of the offices. (Open the desk drawers to find it.)

DROL

Your mission: Traverse multilevel mazes and find a kidnapped family.

Second screen: Go immediately right and down a level, then go right again until you find the boy. Then go down to the bottom level and move left. The lizard should be there about the time you reach midscreen. Note: Sometimes the lizard is up on top and the boy is on the bottom.

Third screen: Go left to the first trap door and then down. While going right, move up and down, firing continuously. This should knock down any flying weapons

in your way. When you try to reach the bottom level, test each trapdoor by opening it a little, then backing up. Then you can see which trap doors are guarded by the man-eating plants, without them killing you.

VEGAS JACKPOT

Here is the arrangement of each reel, so you know how many nudges are needed for the most money.

Reel 1	Reel 2	Reel 3	Reel 4
Chip 3	Chip	Chip	Chip
Plum	Lemon 1	Cherry 1	Lemon
Apple 2	Pear	Lemon	Plum
Cherry 1	Apple	Plum	Lemon
Pear	Lemon 2	Straw	Apple 2
Straw	Plum	Cherry 3	Pear
Plum 2	Melon	Apple	Cherry 1
Melon	Cherry 3	Lemon	Plum
Chip	Pear	Cherry 2	Lemon
Pear 1	Straw 1	Pear	Cherry 3
Cherry	Pear	Straw	Apple 1
Melon	Apple 2	Pear 1	Plum
Cherry 3	Melon	Melon	Melon 1
Straw	Lemon	Pear	Cherry 1
Plum 1	Pear 1	Cherry 2	Straw
Cherry	Melon	Plum	Lemon 2
Chip	Pear 2	Straw	Apple
Plum	Lemon	Lemon 1	Plum
Lemon 2	Melon 1	Apple	Lemon 3
Plum 3	Apple	Cherry	Pear
Lemon	Plum	Pear 2	Cherry
Straw	Straw	Cherry	Apple 2
Cherry 1	Lemon 1	Pear	Lemon

SUMMER GAMES

On the 100 meters, move your joystick in a circular motion instead of left and right or up and down to improve times.

SPELLBOUND

Smash the golden bottle by dropping it and use the broken glass to read the engraved candle. The mirror displays your energy and the objects at the bottom of the screen.

The crystal ball can be used to locate people, except when you are in the lift.

LEADERBOARD

If you are having problems taking a lot of shots getting past the green, press BREAK and you will go past the hole with the amount of shots registered on the Leaderboard. This can be used to get to your favorite holes quickly.

MERCENARY

While you are holding it, the anti time bomb is used to repair damaged buildings. Just fire at the remains of a building and it will rebuild instantly.

The metal detector shows who owns a particular building by displaying a color in the message window. Green is a palyar building, blue is a mechanoid building, and red shows no one owns it.

MONTEZUMA'S REVENGE

At the start of the game move to the top of the rope. Keep pressing SELECT, pull the joystick down and you will go down into a different room.

NINJA

After collecting all six idols a secret trapdoor should appear in the top of the Grey Wall. Go through it and you should be in a blue room. Kill all the people and collect the last idol. After doing that go back to the beginning to complete the game.

SUPERMAN

Pressing the BREAK key repositions Superman when he is in trouble. But be careful - this can also get you into more trouble if you're unlucky.

STAR RAIDERS II

When you are in the other star system and short on energy but don't have enough time to go to a space station to refuel, get energy by going to the sun. Once you are there you will have to get away quick or you will melt. If you do get away you will find your fuel tank is full.

GOONIES

On the first screen move one of the Goonies up to the attic where the printing press is and start printing some money. When the woman goes to get the money move the other Goonie down, go behind the water cooler and jump diagonally at it. This knocks it over and opens the trap door.

On the second screen, when the bat has gone past you, get on the lift and go to the bottom. Change to the other Goonie and move him to the end and when the bat has gone past again get on the lift and go down, but drop off on the ledge above the ladders.

Move the Goonie at the bottom onto the the machine and this will move the rock. Move the other Goonie onto the barrel and move him out a bit. Move the first Goonie to the left, dodge the pots, jump on the ledge and get the key. This will open the door at the bottom.

On the third screen move one Goonie up to the man who is taking a shower and move him across the pipe, being careful of the steam. Move the Goonie to the pipe and then move the first Goonie down. A man with a gun will appear and you move the Goonie who is nearest the thinnest pipe up to the second set of ladders. The pipe will burst and you can get out.

On the fourth screen, don't move anywhere until the bats (that arrive when the bells ring) leave. Then trap the cannon balls by jumping on and off the little objects that come off the roof. Stand on the object at the bottom of the roof and the slates will disappear one at a time.

On the fifth screen collect all the skulls and push them to where there are already two skulls. To get on to the skulls from the roof, bounce on the object underneath the bones. You need five skulls on the ladder to allow you to move to the next screen.

BRUCE LEE

On the eleventh screen you will see two orange masks. Run into these and you will be awarded an extra life. Go off the screen, then go back and collect them again! You may do this several times, but if you complete the game the masks will not be there on your second play.

On the last screen (the one with the chained warlock spitting at you) you must run straight across without stopping.

THRUST

Here is a new method of screen skipping. Simply shoot the reactor until the countdown has begun, then thrust upwards until you warp. The mission will have failed, but you move onto the next screen without losing a life.

This will work for the first few screens, but as the reactor gets deeper and deeper into the complex it will become harder to pull this stunt off - so just shoot the reactor and wait. This time you will lose a life but will still skip onto the next screen.

When you thrust upwards, do not shoot as the shots will fly back at you. Also, when you first warp onto a screen it is possible to shoot before your ship actually appears - this may help if you warp in somewhere inside the complex.

MONTEZUMA'S REVENGE

The following set of operations will solve all levels except two. U and D stand for Up and Down, L and R are Left and Right, T and M are Top and Middle, and K and T mean collect Key or Torch.

DM/KRT/DM/KKUM/LT/LTDM/RT/DM/-
KUM/LT/KKLT/DM/LT/RT/RT/RT/-
KUM/LT/LT/DM/LT/KDM/RT/RT/RT/DM/LT/LT/LT/-
TDM/RT/RT/RT/DM/LT/DM/KLT/DM/RT/KRT/DM/-
Diamond mine.

ZAXXON

To get past the third level do the following: look at the height indicator on the left side of your screen. At the first wall, it should read two-and-a-half squares, at the second three-and-a-half, at the third one-and-three-quarters and at the fourth and final wall two-and-a-half again. You will find a dragon in the next stage.

BOUNTY BOB

Go to the menu screen and move the cursor to the Special Code register. Set this to 61800. Now hold down the F key and press OPTION. Then press START.

You will now be able to use the following keys:

F Bob can fly anywhere on the screen. Press F again to stop.
Q Go to next screen.
A Go back a screen.
B Bob goes back to his original position.
Z Reset screen.

STARQUAKE

Passwords are Artic, Triad, Kernx, Minim, Crash, Atari, Penta, Cosec, Delta, Salco, Quark, Argon, Zap.

WARHAWK

On the higher levels, a growing net appears: if you touch it you can fire twice as fast.

ATARI ARTIST

On the main menu, position the cursor over the center line of the Atari logo. Press fire and a little musical ditty is played.

ONE ON ONE

There is a mistake on the inlay. It says press 1 or 0 for a time out. It should read B for Bird and J for Dr. J.

INTERNATIONAL KARATE

If you hold down X and a number between one and four you can change the speed. Four is slowest and one is fastest.

POLAR PIERRE

If you have started a game with one player only and wish to change to two (or vice versa), press OPTION to go to the construction kit. Remove all disks from the drive and select play on the screen menu. The game should then return you to the title screen where SELECT should do the trick.

SPINDIZZY

When you travel along narrow pathways that are just hanging in the air change to the form of the gyroscope. Then your craft will only fall off if the tiny point that the whole thing is balanced on wanders too near the edge. It gives you more room for error.

SPY VS SPY II: THE ISLAND CAPER

You can drop missile parts just behind foreground trees so that only a pixel or so is visible. In the two player game your opponent tends to miss them, especially if you bury lots of objects around the area to distract him.

AZTEC

To obtain infinite dynamite, collect seven sticks then crawl to the end of a ledge with your hand over the edge. Drop the sticks quickly on each other and they will stay in mid-air. The dynamite indicator will become a mass of weird symbols but you will have infinite dynamite.

ZORRO

Here is the full solution, but you will have to work out a map for yourself.

Collect the brand, heat it at the forge and brand the ox. You can collect the item that was next to it.

Collect the mission bells from the hotel and put them on top of the church with the grave in. The grave will open but do not enter yet.

Collect the trumpet from the hotel, stand on the see-saw and press fire. A guard will emerge and fall on the see-saw, catapulting you into the air. Move along the pole, go up and collect the boot.

Collect the hanky (if you haven't already) then go down the well and take the goblet in the cellar.

Now enter the grave and collect the bags of money. When you are in the room with the flashing icons, go high and far to the left and push the barrels into the cellar.

Go back to the hotel and collect the flowers.

Re-enter the tomb by the cellar and go up to the jail.

Free the prisoners while avoiding the bullets. The prisoners will form a platform to jump on to the low roof. Enter the next room and then work your way across it.

On entering the room with the senorita at the top, work your way to the top. When you reach her, the hanky and flowers will be given to her automatically. She will kiss you and music will play. You have completed Zorro.

M.U.L.E.

To get the price of Smithore to rise, try buying M.U.L.E.s and just letting them go.

Mechtrons can be clever; during land auctions they'll suddenly back down, forcing you to pay a ridiculously high price. So, after the price begins to go over $1000, beware.

The higher the pitch of the note made by the wampus when it emerges from the caves, the higher it will appear on the screen.

In the beginning, buy all the land that you can, leaving yourself enough money to buy a M.U.L.E. As the game progresses, your land will become much more valuable.

In M.U.L.E., the passage of time is represented by the depletion of your food resources: The more time you use in any turn, the more food you eat. You'll find that near the end of the game, if you don't plan to make any major changes in your land organization, you won't need to buy food. You can save your resources and use them in more profitable ways.

SEVEN CITIES OF GOLD

It's often wise to convert a village or city into a mission, instead of conquering it. To do this, go up to the chief and AMAZE him. Then offer him gifts. If he isn't converted the first time, leave the village, come back, and try again.

If you're on friendly terms with the natives, occasionally stop your party in the wilderness. Wait to find out if your pack-bearers have anything to say. Sometimes they'll guide you right to the Incan capital.

If you create enough worlds, you might meet civilizations more advanced than the Incans.

KARATEKA

Here's a good method for killing flunkies and Akuma himself: Stand in one spot and wait for them to approach you. When they move, give them a couple of kicks, to force them back. Repeat this procedure until you've utterly decimated your opponent.

For opponents who don't come to you, provoke them by stepping into them before they start to kick you. When they set up for the kick, back out of range. After they kick, beat on them a little.

A kick may be effective on anything that stands in your way.

At a certain point (on- or off-screen), your opponents will not back up any farther. Force them to that location; they'll be much more vulnerable to multiple blows.

When fighting a formidable opponent, rely mostly on the middle kick; chances are, it will hit at least once per volley.

Don't rely on only one method of attack; different opponents require different strategies.

When fighting the bird, it pays to practice and prepare. Figure out what kick or punch you must use, and start using it before the bird reaches you. Also, when it comes time to kill the bird, back off to the other side of the room so you have time to set up your blows.

CASTLE WOLFENSTEIN

Avoid the long text beginning by pressing CONTROL-RESET quickly after getting killed. You must do this immediately! The program will reboot, ask you to choose between keyboard or joystick, and resume where you left off.

NECROMANCER

The best way to grow trees is first to plant one in each corner. When they mature, plant a group of trees between them. The outer, older trees will protect the inner, younger ones from attacking the trolls.

At the second set of screens, it may be easier to go straight down and proceed to the third set. But beware: You'll find that all the spiders you failed to kill on previous screens will appear now.

50 MISSION CRUSH

Fly diagonally over the anti-aircraft fields. This diminishes your vulnerability.

Always carry extra bombs. Your heavier load will burn more fuel, but if you use the bombs effectively, it will improve your score greatly.

SHATTERED ALLIANCE

If possible, concentrate your attacks on weaker units, such as light infantry or cavalry. If you rout these units quickly,

you'll lower the morale as a whole. Also, the more you rout, the easier it is to rout other units; it works like a chain reaction.

To rout the enemy, set your heavier units on some of the enemy's weaker ones, then cast haste spells on your unit at every turn. This way, at each turn you'll be attacking. Before long, the enemy will turn tail and flee.

Establish exactly what arms your opponent has; it's quite a shock to see half your medium cavalry decimated by the pikemen you'd thought were a bunch of wimpy infantry.

SERPENTINE

Get a snake to follow you, and when he makes a turn, double back and nail him.

Don't kill the last snake until you lay an egg (just cut him down to your size). When doing this, stay as close to home as possible. This way, the frog won't have time to eat the egg while can't defend it.

CONAN

On level 3, wait on the ladder, just high enough to avoid the ants, until the teleporter shows up. be sure there are no ants anywhere on the screen, and run for the portal. Once on the top level, be sure to touch the bird.

On level 4, hide on the upper ladder, as close to the top as possible, until a gem or sword appears. This spot gives you easy access to all platforms.

Also on level 4, be sure to get an extra gem before you leave. It is very hard to get one on level 5.

On level 5, jump onto the first step and get as close to the was as you can. This puts you below the dragons' fireballs but lets you kill an oncoming dragon if you throw your sword when the dragon is slightly past the lamp.

On level 6, go down the closest ladder and kill the eyes from behind the torch; the sparks can't get you there.

On level 7, stand on the catapult for a while. This will give you extra strength to turn a star back into a gem.

On any level, have patience. A good barbarian always thinks before he acts.

PASTFINDER

Hold down the fire button if continuous fire doesn't bother you.

Always use a scrambler and beam shield (if you have them) on squares with black boxes.

Heavy metal should always be in use.

Don't get overly distracted by shooting the objects in your way. They're just not worth risking death for.

When your radiation level starts getting high, don't waste time collecting artifacts. Head for the nearest diamond as fast as you can.

If the free lives are out of your way, i.e. below you or through a zone of high radiation, you're better off forgetting them. You'd probably lose a lot more than you'd gain by pursuing them.

After getting to the top of a set of screens, take down any scrambler or beam shield you have. When you get back to the lower levels you won't encounter too many enemy ships.

When traveling without protection on "black box" screens, try to stay to one side of the screen. This will give you the most time to react against enemy ships.

The best way to avoid enemy ships and their shots is to jump over them.

ENCOUNTER

When fighting saucers, remember to use barriers to deflect your opponents shots. For example, when you're fighting a time bomb saucer, and it explodes, the only thing to do is hide behind the nearest barrier and wait for the shots to go by.

When fighting saucers, keep moving forward. This prevents them from sneaking up from behind. When fighting drones, keep moving backward to maximize your firing time.

If you want to go through the levels quicker, keep restarting the game until there are only 10 enemies to a sector.

The best way to shoot opponents you can't see is to align their radar signals with the top cross hair and blast away.

When traversing between levels, move only when an obstacle appears in your target sighting.

To avoid shots headed for you, back off-moving either left or right depending on where the shots are coming from.

MASTERS OF THE LAMP

When traveling through the tunnel, ignore the closer diamonds and concentrate on flying toward the most distant one.

Keep a light touch on the joystick when flying. If you make one radical turn, it becomes incredibly difficult to regain control.

ALI BABA AND THE 40 THIEVES

To prevent the magic water chests (such as the one in the Aquarius room) from drying up, press the RESET key immediately whenever the message that tells you it's dried up is displayed. You'll return to the title screen. Start a new game then, and you'll continue where you left off and the chest will still be there.

CASTLE WOLFENSTEIN

Here is a list of directions that will get you out of any castle: Up stairs, left, left, down, up stairs, left, down, down, right, right, up, up, up, left, up, left, left, down, right, up stairs, down, left, left, up, right, up, right, up, left, upstairs, up, left, down, down, right, right,

right, up, up and you're out. Although you may have to search around for the plans, you can always get yourself back on the right track.

CONAN

On the first level, climb to the top of the castle without killing the bat, and jump onto the tree below. After you land, slowly walk left until you fall down a little, and then go as far right as you can. Below you, there is an invisible ladder. If you go down this, you'll receive a free life.

SPY VS. SPY

If you're playing against the computer, try playing a hard version but don't play with the hidden airport. Find the airport and water trap all the entrances. Then, simply wait for the computer to collect everything. When it has it all, it'll go for the airport only to be killed by the trap. Simply search the nearby furniture, grab the briefcase and split for the airport.

SPY HUNTER

When the truck drops you off on the side of the road, you can maneuver the car to the black strip on the far right side of the screen. There, you'll be impervious to most damage, and able to rack up points indefinitely.

When traveling by river in the advanced game, slow down enough to let the boats pas you from behind and destroy everything that gets in front of you. This reduces the number of mines in front of you, and eventually only the large boats (worth 1500 each) will approach. Also, if you can stay to the left, you won't be forced back on land, and probably will obtain more points.

Resting an object on the "0" key throughout the game might make it easier to use oil and smoke.

THE GREAT AMERICAN CROSS COUNTRY ROAD RACE

On condemned roads or on those with rain alerts, drive up the center of the road, constantly accelerating. This will minimize the speed lost by hitting potholes or water, and you will increase your average speed.

If you are forced to slow down for the police or if you crash, check to see if a gas station is coming up. If one is, take the opportunity to "fill-er-up."

GYRUSS

When you get to the chance screens for each planet, position your ship as follows. Neptune: T,B,B,E. Uranus: R,R,B,L. Saturn: Bottom left,B,R,T. Jupiter: B,B,T,T. Mars: R,B,L,T. Earth: T,L,B,R. T-Top, B-Bottom, R-Right, L-Left. The first letter refers to the position your ship should be in to shoot the first wave of aliens, etc.

H.E.R.O.

Using the laser to blast through walls is safer than using dynamite in areas where retreating could be deadly.

Unless you've memorized the layout of the mine, slow down before descending and keep to the left of wide, downward passages to avoid breaking lights.

WHAT EVERY MAN SHOULD KNOW

Sorry ladies, but this article is not for you. Please don't read it. It'll only make you mad, even though every word of it is true.

OK guys, now that we're alone, it's time to discuss the gender of the computer. Even though like most inanimate objects it is referred to as "she" in most off the cuff comments, ("She's a nice machine, eh?"), the computer is deep down thought of as male.

Most speech synthesizers for computers have a male type voice. This is probably due to the popularity of HAL in 2001. Who wants a feminine voice to sing "Daisy"? (Come on guys... I know you've made your computer sing it at least once.)

I think the reason computers are thought of as male is that no one can believe that a female could be so efficient. Computers are true contributors to society. They serve a purpose. They are useful. Does this sound like a woman? No way! So through the years everyone has been thinking that computers were male.

But everyone was wrong. Computers are no more male than Bo Derek. Every last chip is feminine through and through. This may shake you guys up a bit, finding out that your best friend is really a woman, but it's time we faced the facts.

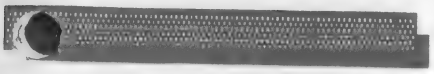
Think about it. Their only purpose is to serve you, and they do it happily. As long as you tell them exactly what it is they are supposed to do. If the instructions are not clear they will get totally confused. If that doesn't sound like a woman, what does?

Memory is the one big advantage that both computers and women have over men. Neither ever forgets. And neither ever lets you forget it. Most women have 8 megs of memory, especially for anniversary dates ("You mean you forgot the third anniversary of the day we first held hands in public!!!").

If you still don't believe that computers are female, boys, think about this. Would you really spend so much time and so much money on a man? That little gold-digger winked a silicon eye at you and had you hooked from the start.

But what really convinced me was when I started to write this article on my computer. My computer refused to boot up my file when I saved it to disk. That is, until I promised to buy it a fur coat.

Naive little things, aren't they?



TEST RESULTS

by Peter Schefsky

I usually prepare for the user group meetings by diving into a large pile of newsletters, magazines, newspapers, and other various sources looking for tidbits to pass along to the membership. While going through the "Atari User" magazines (published in England), I usually read the question and answer section which tends to handle very basic problems relating to the Atari system. Nearly every question could be answered by reading the owners manual or searching through a book on Atari BASIC. This got me to thinking. How much do the members of PACUS know (or don't know)?

I decided to compile a test of five questions culled from several issues of the magazines letters and distribute the result at the next months meetings. It was quite interesting to see the looks of surprise when a "Test" was to be given to the membership. Hearts pounding, sweaty palms, eyes glancing from side to side. I thought it was just like being in school again.

Well, the results are in and I won't say the club did poorly, but we also shouldn't brag about it either! No particular group did any better or worse than another, so I feel that this is representative of user groups across the country. If you are reading this article in an exchange newsletter, try giving the test to your members and share the results with me.

We will now look at each question, give the correct answer(s), and give a percentage breakdown of response correctness. It should be noted that several questions were answered with multiple replies and usually not entirely correct - one right answer and the rest wrong. The so-called experts also had some difficulty but tended to be more creative in their answers. Apparently they thought it was an essay type test. It should also be noted that nearly 50% of the tests that were handed out were not returned.

Background: Pauline purchased an Atari computer 2 years ago and occasionally encounters some problems. She belongs to a user group but is afraid to ask questions because the other members intimidate her with their expertise. Not knowing how to overcome her fears we decided to present her problems to other users and hopefully be able to help her. Pauline owns an entirely unmodified system consisting of an 800XL, a standard color television, and a 1050 disk drive.

1. Pauline has booted her computer with Atari DOS 2.5 and her screen shows the familiar menu. She now removes the DOS disk and replaces it with another and types the letter "A" and two returns. The drive starts, the screen scrolls up one line, but nothing else is reported to the screen and the drive never stops.

What operation was she trying to perform? She was calling up the disk directory. Correct - 87%, wrong - 9%, no answer - 4%
What might have gone wrong to cause the problem? The disk wasn't formatted, disk format not compatible, drive door open, disk faulty, drive faulty, faulty equipment in system. Correct - 68%, wrong - 23%, no answer - 9%

2. Pauline received her latest issue of "Atari Enthusiast" magazine in the mail yesterday and found a super new program that formats disks in only 2 seconds. The program listing was included in the article and she promptly started to type it in. After only a few minutes she was getting error messages on the screen and she gave up in disgust. A sample portion from the program was:

```
10 ;
20 ;STACKADD30 ;
40 ; X=$600050 ;
60  ;THIS PROGRAM FORMATS DISKS IN 2 SECONDS
70 ;80 STKADD
100 CLD
```

What did she do wrong? The listing was in assembly language and she was using BASIC. Correct - 59%, wrong - 32%, no answer - 9%
Comment - several of the members familiar with assembly language missed the fact that she was more likely to be typing in a BASIC program and immediately attacked the contents of the listing. Interestingly, no two people had the same answer about the errors in the assembly listing. The listing was copied from a magazine.

3. After giving up on the previous problem, Pauline decided to type in a different program from the same magazine. She chose a long one that covered nearly five of the magazines pages and spent several hours inputing it into the computer. When it came time to save the program she placed a formatted disk into the drive and closed the door. She then typed SAVE "D:MYPROGRAM.BAS and followed it with a return. Nothing happened! The drive just sat there and stared back at her.What went wrong?

DOS was not booted into memory, drive was not on. Correct - 50%, wrong - 32%, no answer - 18%
Comment - many experienced users believed that the filename length of nine characters (which is too long) was causing the problem. An attempt to type "D:MYPROGRAM.-BAS would be saved as MYPROGRA.BAS.

4. While typing in the above listing our heroine tried to type the following line and encountered some trouble.

```
610 PRINT "{5 SPACES}Watch Your Step": GOTO 1010
```

What was entered wrong? Be precise in your answer. Curly brackets { } are not possible on the Atari 8-bit, {5 SPACES} is an editing command meaning hit the space bar 5 times. Correct - 55%, wrong - 27%, no answer - 18%

5. Pauline purchased a disk of public domain software from her user group and had trouble running one of the programs

from basic. The disk contained the following programs:

FORMAT.BAS
DOS.SYS
DUP.SYS
CARRIAGE.BAS
HIFLY3.BAS
GLOBAL.EXE
LITE.BAS
DEMO.BAS

Which one did she have trouble with and why? GLOBAL.EXE, a binary loaded executable file. Correct - 95%, wrong - 0%, no answer - 5%

Cloning Around

by Peter Schefsky

This column will cover PC emulation on the Atari ST using the new product "pc-ditto" from Avant-Garde. I will discuss some of the problems specific to this product, problems common to all PC clones, building your own 5 1/4" disk drive and anything else that may pertain. Off we go!

HOW COMPATIBLE IS "PC-DITTO"?

The general rule of thumb is if it runs on a stock IBM PC XT, then it will run under "PC-DITTO". This is especially true of the DOS that you are considering or using. DOS 3.2 and 3.3 will give you the most features and versatility, while you should have no problem running DOS 2.0 and higher.

The claimed amount of software that will run is 95% which is quite impressive. The realistic usable amount is lowered when you discard games or programs written IBM Basic or BASICA. You will find that GW BASIC and some versions of BASICA written for compatibles work properly.

WILL IT SUPPORT 5 1/4" DISK DRIVES?

Certainly! The IB DRIVE from IB Computers, 1519 S.W. MARLOW, PORTLAND, OR 97225, PHONE (530) 297-8425, is your best bet for hassle free operation. The drive is currently selling for $239, but a price increase is due shortly. They quoted a user group price of $220 but the details are still out on that.

If you wish to cobble your own drive together, check through the pages of Computer Shopper for amazingly low prices on drives, cases, and power supplies. The cable is available for $30 from IB Computers and connectors are $3.95 from B&C Computer Visions , 3283 Kifer Rd, Santa Clara, Ca 95051, PHONE (408) 749-1003.

Building your own drive at this time is still an adventure, but I hope that in the very near future some enterprising (and generous) hardware hacker will bring forth a fool proof method for assembly.

Some common pitfalls for the "do-it-yourselfer" are:

1. The ST uses a CMOS driver for the FLOPPY PORT and XT drives are TTL. the current needed to pull the lines low enough is not present in this configuration. Some XT drives might work, while many others won't. AT drives are CMOS and work fine, but they don't come cheap. If you already have a drive and don't know what type it is, look for the terminator resistors and if they are under 1K, it is a TTL drive. If it is over 2K it is a CMOS drive.

2. The present precomp on the ST is configured for 3 1/2" drives, thus it is set for "inner tracks" all the time. This bug will cause problems for some add-on drives, but a fix for this should be available from your dealer or Avante-Garde soon.

WHAT ARE SOME OF THE KNOWN BUGS?

1. DOS 3.3 Is not entirely compatible when installed in a hard disk.

2. Zenith, Blue Chip, PC's Limited, and Hitachi lap top DOS operating systems does not work entirely. If the DOS you are using does not work correctly, contact Avant-Garde with complete details. If you have not sent in your registration card for "pc-ditto" or you are using a pirated copy, please don't waste their precious time. Support is for registered owners only!

3. Disk errors are occurring on some single-sided drives. Error messages such as "boot disk failure" and "I/O error" can be traced directly to the single-sided drive.

4. The program "PC_DFMT" contains a bug that will not allow it to format a previously non-formatted disk. Although the program is sometimes successful, the results are unpredictable for usability. Additionally, if you format a disk with a particular DOS, do not interchange that disk with another DOS. "pc-dfmt" was designed for IBM, Compaq, and Eagle DOS, so don't expect other DOS's to perform flawlessly with it.

5. In the manual, it refers to TOS system disks. It should read GEMDOS.

HINTS AND HELP

1. "pc-dfmt" will not allow you to create a single-sided 80 track bootable DOS diskette. If your DOS is below 3.2, you are limited to 40 track bootable and 80 track data diskettes. To format and create an 80 track single-sided bootable DOS disk: Create a CONFIG.SYS file containing the line: DRIVPARM=/D:x/T:80/S:9/H:1

(If your 3.5" drive is A, replace x with 0; if b, replace x with 1.)

2. A patch to allow "pc-ditto" to run on a monochrome monitor has been found by Richard Morris (Sysop of Chem-Link BBS, CIS 72327,1323). He suggests using Disk Doctor to find sector 124 (I found it at sector 230) and search for the hex string 67A19405E1C and change the 67 to 60.

I tried it and can't really say that it is usable (wrong resolution), but will say that it works.

IN CONCLUSION

I hope that this information is help-

ful and you have purchased (or plan to) your copy of "pc-ditto". If you would like me to form a SIG for this emulation (and another) tell me so at the meeting. Don't wait for it to happen, without feedback I will assume no one is interested!

The next update (first one free to registered owners) is scheduled for this fall and patches to correct bugs will be made available through dealers.

Exploring GFA BASIC

by Randy McSorley

Before I get to this month's example program, I thought I'd discuss one of the most important aspects of programming in GFA BASIC - support. GFA BASIC is the fastest growing programming language on the ST, and there are literally hundreds of good example programs to assist you. In addition, there's a special section of the GEnie network devoted to GFA. It's located on the MICHTRON ROUNDTABLE, and boasts lively discussions for the beginners and the professionals alike.

Each Saturday evening the MICHTRON ROUNDTABLE hosts an open discussion on GFA where you can look in and ask the experts any question you might have. After the discussion periods, the session is saved as a file so that all can download it and read it. Many helpful tips can be gathered there.

If you don't already belong to GEnie and program in GFA BASIC, I suggest you log on today. At the reasonable rates they ask, GEnie is the Atari ST user's best friend.

Michtron will soon be releasing the GFA BASIC COMPANION, a disk full of routines that unleash the full power of GEM for GFA BASIC. Dialog boxes, sliders, and bunches of other GEM features will now be easily available to the GFA programmer. It will list for $49.95.

On to the example program of this article. This month I'll try to explain the process for restoring the color palette in your program. In many programs you will find it necessary to change the color palette with the SETCOLOR command to suit your needs. When your program ends, however, you'd like to be able to restore to original palette so that the desktop will not look "goofy" (or outright unreadable!).

To do this, I've written a short demo program that will draw a bunch of filled boxes on the screen, change the palette with SETCOLOR commands, and then restore the original colors. The REMARKS (') should explain the workings of the program well enough. This program works only in LOW resolution, so that I could show you sixteen different colors being changed, but the routines to save and restore the color palette will work equally well in any resolution.

```
'
' Works only in LOW res
Rez%=Xbios(4)
If Rez%<>0
Alert 1,"LOW RES ONLY",1,"Oops!",Button
  End
Endif
'
Dim Oldpal%(15)
Start:
'
' get original colors
'
For X=0 To 15
  Oldpal%(X)=Xbios(7,W:X,W:-1)
Next X
'
' draw some colored boxes
'
C=0
For X=0 To 299 Step 20
  For Y=0 To 179 Step 20
    Inc C
    If C>15
      C=0
    Endif
    Deffill C
    Pbox X,Y,X+18,Y+18
  Next Y
Next X
Alert 1,"These are the|original colors",1," OK ",Button
'
' change colors
'
For S=0 To 15
Setcolor S,Random(15),Random(15),Random(15)
Next S
'
' Restore original colors
'
Alert 1,"These are the changed colors",1," OK ",Button
Pause 30
Alert 1,"Restore original colors",1," YES ",Button
'
For X=0 To 15
  Void Xbios(7,W:X,W:Oldpal%(X))
Next X
'
' end?
'
Alert 1,"Run again",1,"Yes|No",Button
If Button=1
  Cls
  Goto Start
Endif
```

BASIC VIEW

Atari 8-bit Software Review

Basic View.
by Jeff Fischman
Antic Catalog, $19.95

reviewed by Ron Starkey

Basic view is a program that allows you to watch your Atari BASIC (unfortunately not with BASIC XL or XE cartridges installed) programs as they execute. You see the line that is being executed and the values of the variables. You can switch between the Basic View screen and the screen produced by the BASIC program. For example you can watch the plotting of an image on a Graphics 8 screen and then

flip to the Basic View screen to see how the points to be plotted are generated and the values of each variable at that particular instant.

The program also allows you to edit a BASIC file and then run it again to see how the modifications work. The normal use of the program would be to boot the Basic View Program, and then load the BASIC program you wish to examine. By typing "VIEW" you are sent to the Basic View screen where you can choose from several options by using a joystick to point. The options include:

Listing a program. You can scan thru the program either from top to bottom or in reverse.
Run the program. Allows you to run a program in one of three speeds.
Choose the two variable to be displayed on the Basic View screen. Simple numeric, string and array variables can be displayed.
Stop line. You can tell the program to stop at a particular line number.
Continue. Will allow you to continue execution of the program after you have stopped it. Stop may be due to the Stop command or by pressing the joystick trigger.
Return to BASIC. Allows you to return to normal Atari BASIC for editing, etc. You can get back to Basic View by typing "VIEW".

Basic View occupies 12K bytes of memory immediately beneath Atari BASIC. User screen memory is just beneath Basic View. I think you will find Basic View a helpful way of writing and debugging your Atari Basic programs. If you program in BASIC XL or XE you can still use Basic View if you avoid the use of all the additional commands available in those BASIC's. I would still recommend BASIC XL for program writing, even if you do not use the additional power in the program code, you can still take advantage of the greater ease of programing with the use of the BASIC XL commands: DIR, RENUMBER, LVAR, and several more.

Documentation of Basic View, as is the case for all the Antic Catalog programs is on the flip side of the program disk. A point that the documentation fails to mention is the Basic View program can be made to run on boot-up if you change the filename "LDVIEW" to "AUTORUN.SYS".

The price is right. If you are an Atari BASIC programmer or want to begin programing I would recommend Basic View.

Pete's Ramblings

by Peter Schefsky

SHOW STOPPERS... put a little more grease on your roller skates; the Chicago Atarifest has been cancelled and we are going to Detroit instead. The Atari-Magic Show, which is sponsored by the Michigan General Information Conference will be held August 29-31 at the Southfield Hilton in Southfield, Michigan. For more information call the MAGIC Hotline at (313)-751-8291 or the MAGIC BBS at (313) 368-6882.

Atari is planning only four shows next year and they will be under their control with user groups helping out with ticket taking and other mundane tasks. Chicago is planned as one of these locations.

SUMMER DOLDRUMS?...with July's Green Bay meeting date changed and Sheboygan's policy of not having meetings during the summer, attendance has been very poor, so I will repeat some of the news, products, etc., that were discussed at recent meetings.

As far as summers go, 1987 has been rather active if you own an ST. The Magic-SAC continues to grow and now compares with a MAC SE, which was made possible by the addition of hard drive support on version 4.5. Also coming from Data Pacific is the "Translator" disk drive interface which contains a full Z80 computer system. It will work with both single and double sided drives, and also the 1040 (and new 520 STFM) internal drives. Priced at $199 or so.

If your Magic-SAC clock tends to drift, replace the 4.7 or 47pf capacitor next to the crystal with a radio [illegible]ck trimmer in that range. Adjust, test, etc. It seems to work better that way on carts with out of spec caps.

A WOLF IN 1040 CLOTHING...the 520 STFM is currently on the market with prices of $499/mono and $699/color. The new computer comes in a 1040 case, includes the RF modulator, single sided drive, and 1040 motherboard. I've heard that some dealers will install a double sided drive for an additional price. Keep in mind that the PACUS library is on double sided only.

8 + 16 = 8?...the 8-bit emulator will possibly be included in the Fall (August) issue of START Magazine along with the source code. This will probably persuade Ron Starkey to finally upgrade to an ST, but he may be holding out for the Commodore or Timex Sinclair emulator.

WEDDING BELLS ARE RINGING...they say that marriages are made in heaven, but it also can happen at a PACUS meeting. Two PACUS members, Dana Frisque and Pat Bath, have announced their upcoming "SIO connection" (get your minds out of the gutter folks!). Dana tried on his tuxedo the other day and was using an "Atari Flying High" pin as a bow tie clip! That poor boy has only one thing on his mind, that this marriage will really increase his software base. Best wishes, Pat and Dana, from PACUS and myself.

P.S. Save some cake for the meeting.

TWINKLE, TWINKLE, LITTLE STAR... Stardust Software is a new company publishing for the Atari 8-bit machines. Look for release of their first product called "Quick Code...The Programmers Library."

ROW, ROW, ROW YOUR BOAT... Broderbund has announced a summer promotion and sweepstakes with the grand prize being a $3,500 Carribbean cruise. "TAKE THE MONEY" sweepstakes and $5 rebate coupons on software are available at PACUS meetings or your favorite dealer. If you didn't get invited along on the PACUS yacht, get a sweepstakes entry today.

GEE, THAT'S...KINDA NICE... Terrific Corp., 17 St. Mary's Ct., Brookline, MA 02147, (617) 232-2317 is offering discount prices on several of their products to PACUS members, You can order the EZRAM 520 memory upgrade - 25% off, ZTIME 520 or 1040 version - 25% off, X-10 powerhouse controller for 8-bit - 20% off, or Z-port Digital I/O controller for ST series - 20% off. Tell them PACUS sent you.

FONT-TASTIC... Interactive Micro Systems, Box 1188, Canyon Country, CA 91351-2600. (805) 298-7357, has sent us a news release regarding their new product "Font Partner". In their words "Created to make a great program greater, Font Partner will allow users to easily create printer and screen fonts for Softlogik's Publishing Partner". It will be available in mid August, 1987." The price is $24.95 plus $3.00 for shipping and handling.

ON THE ROAD AGAIN... During the month of June, Randy, the wives, and myself traveled to Marshfield to "entertain the troops." The group consists almost entirely of 8-bit owners (with one ST owner). They are an enthusiastic group that have good possibilities of growing into a strong base for north central Wisconsin. We were delighted by their warm reception as we related news of Atari and demonstrated the ST. Folks, we just like talking "Atari"!

HANG ON SLOOPY...if you are of the opinion that our columnist John B. Sloop belongs to one of the other user groups in the PACUS organization, and not yours, you are sadly mistaken. Yes, he walks among us at one (or more) of the meetings. His identity is known only to a select few and he wishes to remain that way. But who is he? Or is it a she? Is this person as strange and demented as his column suggests? PACUS is proud to present our own contest. WHO (OR WHAT) IS SLOOP SWEEPSTAKES is now under way. The rules are simple: fill out an official entry blank telling who (or what) John B. Sloop is, which group he (she) belongs to, and his grandmother's maiden name. Please bring your entry to the next meeting or send it to the address that appears on the back of this newsletter (our address, not yours). Judging will be done by our "Panel of Experts" and no entries will be returned. What's that? You want prizes? We'll give you prizes, a BIG sur-PRIZE!

P/M GRAPHICS
NOT JUST FOR GAMES ANYMORE

by Ron Starkey

In the April 87 installment of this column we saw the technique of overlaying players, but not over-lapping them. The players meshed to form a checkerboard pattern with one player set in red and the other in white, but two players were not displayed on the same pixel. We are now going to look at players that are overlapped and how we can control the display priority so one of the players is displayed in front of the other, or alternatively the overlapping players combine to produce a third color. The player missile display priority is controlled by the value stored in memory location 623. A complete description of all possible control functions of location 623 can be found in "Mapping the Atari" by I. Chadwick.

The value of each of the 8 bits in location 623 has a function. Bit 5 controls player overlap color. If bit 5 has the value 0 then the display of player overlap will be that of the player of higher priority (In this case player 0 has priority over player 1). The color of player 0 will have priority and be displayed. Therefore, it will appear that player 0 is passing in front of player 1. If bit 5 is set to the value 1 (POKEing 32 will do this) then the overlap of players has a third color. The color of the overlap in this case is determined by performing a logical OR on the color value for the two players. More on the color of the overlap in the next installment of this column. Memory location 704 dictates the color of player 0 and location 705 does the same for player 1.

The program shown below will produce two large players (0 and 1) and move player 0 across the screen area where player 1 is displayed. The values for the player colors are displayed as is the GPRIOR value in location 623 (determines the relative priority of the two players). Observe how the players interact as the values change.

The player/missile system is setup in lines 50, 60, and 120 thru 350. Lines 410 thru 540 move player 0 back and forth on the screen and change the colors of the players on each pass by POKEing locations 704 and 705. On each pass the subroutine in lines 610 thru 650 is called to update the display of the important variables used in the program. The GPRIOR is changed between the value 0 (00000000 binary) and 32 (00100000 binary) in lines 550 or 560. A pause routine (line 590) is employed to slow the motion of the players.

Try changing the colors of the players by altering the values of KOLOR1 and KOLOR2 in line 110. See line 115 for a suggestion. The color combinations you will be able to produce will range from wow to ugh. Press the SYSTEM RESET key to exit the program.

```
0 REM "D:PMPRIOR2.BAS
5 REM
10 REM PM GRAPHICS DEMO
20 REM RON STARKEY  JULY 1987
30 REM PLAYERS 0 AND 1
35 REM
40 REM SET P/M BASE ADDRESS
50 PMBASE=PEEK(106)-4
60 POKE 106,PMBASE-1
70 GRAPHICS 0
80 POKE 559,0:REM TURN OFF ANTIC
90 POKE 752,1:REM TURN OFF CURSOR
100 POKE 710,4:POKE 709,0:REM SET COLO
R5
110 KOLOR1=24:KOLOR2=70
115 REM TRY KOLOR1=42:KOLOR2=198
120 REM ==========================
130 REM CLEAR PLAYER MISSLE RAM
140 FOR X=512 TO 768
150 POKE PMBASE*256+X,0
160 NEXT X
170 REM PUT DATA IN PLAYERS
180 FOR PLAYER=0 TO 1
190 FOR LINE=30 TO 70
```

```
200 POKE PMBASE*256+PLAYER*128+PLAYER*
20+512+LINE,255
210 NEXT LINE
220 NEXT PLAYER
230 REM SET COLORS
240 POKE 704,KOLOR1:POKE 705,KOLOR2
250 REM SET HORIZ POSITION
260 POKE 53248,72:POKE 53249,112
270 REM SET PLAYER SIZE
280 POKE 53256,3:POKE 53257,3
290 REM SET VERT RESOLUTION
300 POKE 559,46
310 REM ENABLE THE PLAYERS
320 POKE 54279,PMBASE
330 POKE 53277,3
340 REM SET PRIORITY
350 POKE 623,8
360 REM ==========================
370 POSITION 4,1:PRINT "P/M GRAPHICS P
RIORITY REGISTER:"
380 POSITION 5,5:PRINT "PLAYER 0 COLOR
:"
390 POSITION 5,16:PRINT "PLAYER 1 COLO
R:"
400 POSITION 10,22:PRINT "PRESS RESET
TO EXIT";
410 FLAG=1
420 POKE 77,0:GOSUB 610
430 FOR X=72 TO 152
440 POKE 53248,X
450 TIME=10:GOSUB 580
460 NEXT X
470 POKE 704,KOLOR2:POKE 705,KOLOR1:GO
SUB 610
480 TIME=60:GOSUB 580
490 FOR X=152 TO 72 STEP -1
500 POKE 53248,X
510 TIME=10:GOSUB 580
520 NEXT X
530 TIME=60:GOSUB 580
540 POKE 704,KOLOR1:POKE 705,KOLOR2:GO
SUB 610
550 IF FLAG=1 THEN POKE 623,32:FLAG=0:
GOTO 420
560 IF FLAG=0 THEN POKE 623,8:FLAG=1:G
OTO 420
570 REM ==========================
580 REM PAUSE LOOP
590 FOR PAUSE=0 TO TIME:NEXT PAUSE:RET
URN
600 REM ==========================
610 REM REPORT VALUES
620 POSITION 15,2:PRINT "POKE 623,";PE
EK(623);" "
630 POSITION 22,5:PRINT "POKE 704,";PE
EK(704);"  "
640 POSITION 22,16:PRINT "POKE 705,";P
EEK(705);"  "
650 RETURN
660 REM ++++++++++++++++++++++++++++
```

Upcoming Meeting Dates

PACUS – Green Bay:

August 1st

September 5th

October 3rd

Green Bay meetings start at 9:00 a.m. in the meeting room of EastTown Mall, Green Bay.

PACUS – Appleton:

August 11th

September 15th

October 13th

Appleton meetings start at 6:30 p.m. in room W20 of UW-Extension, Midway Road, Menasha. NOTE! The August meeting will be held in room W40.

PACUS – Sheboygan:

September 15th

October 13th

Sheboygan meeting start at 6:30 p.m. at the Sheboygan Y.M.C.A.

NEWS ITEMS

CompuServe has lowered their daytime connect charges. The rates are now the same 24 hours a day; $6.00/hr for 300 baud, $12.50/hr for 1200/2400 baud.

A complete line of ATARI calculators will soon be arriving in the stores. A company named Hartech Ltd. licensed the ATARI name and logo for their line of calculators, which includes solar LCD credit card size calculators, desktop calculators, and a 4000 charactor data bank calculator which can store names and phone numbers. Look for them this summer.

Local Atari BBSs

ACE BBS 497-8165
24 hrs
On-line games
One-liners
300-1200 baud

ACE-ST BBS
24 hrs 496-0724
PACUS message base
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Freedonia BBS
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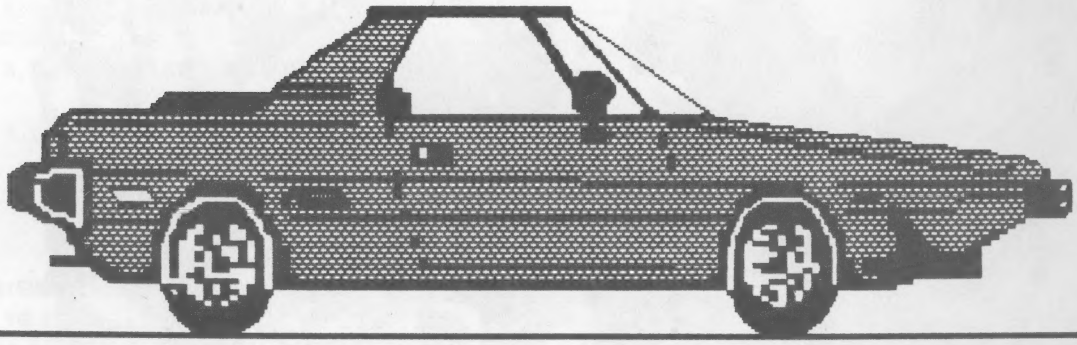

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